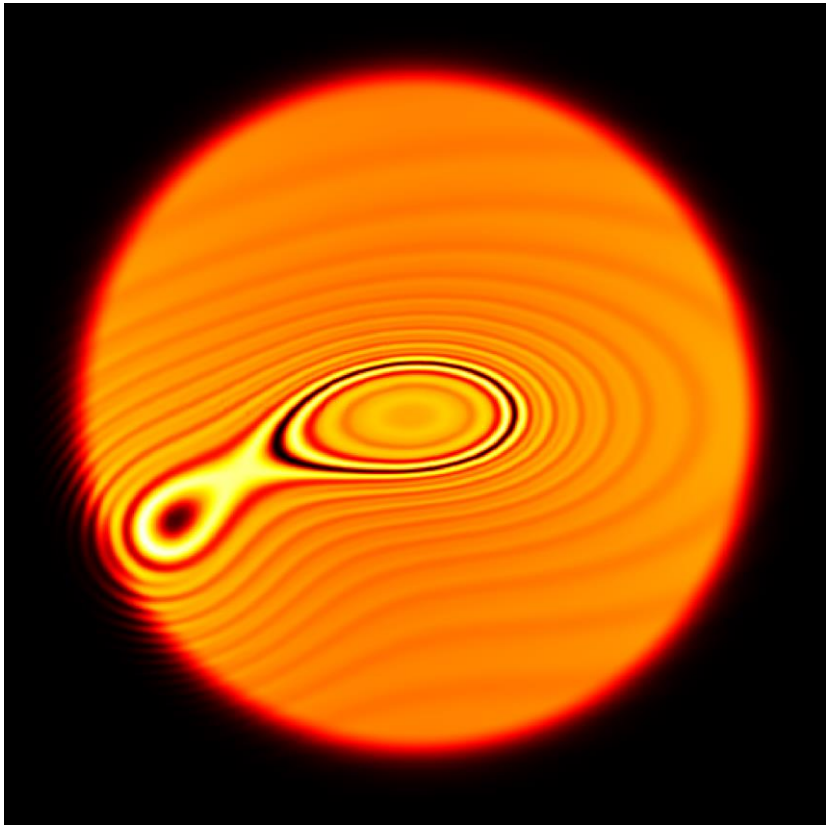
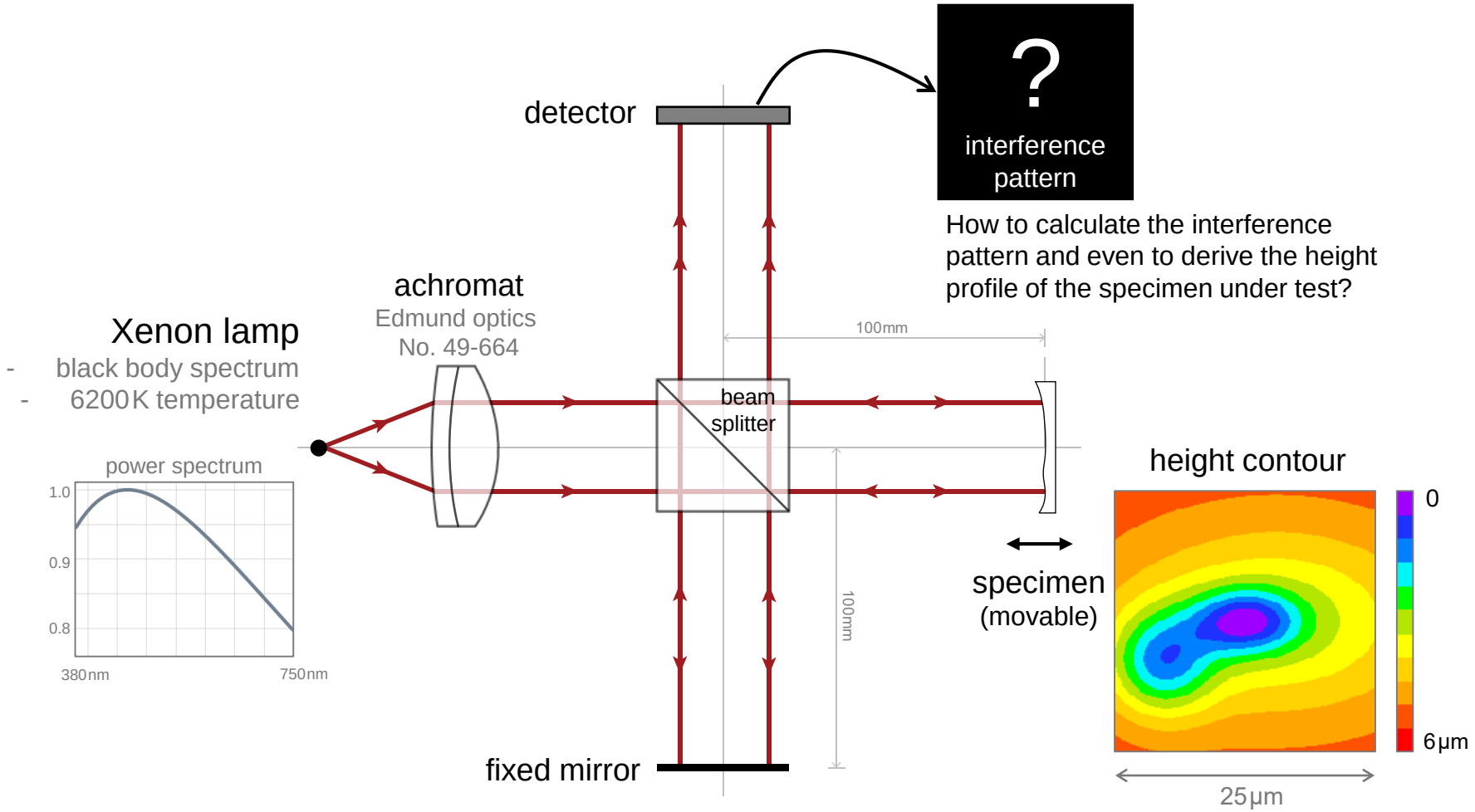
Optical Topography Scanning Interferometry

Abstract

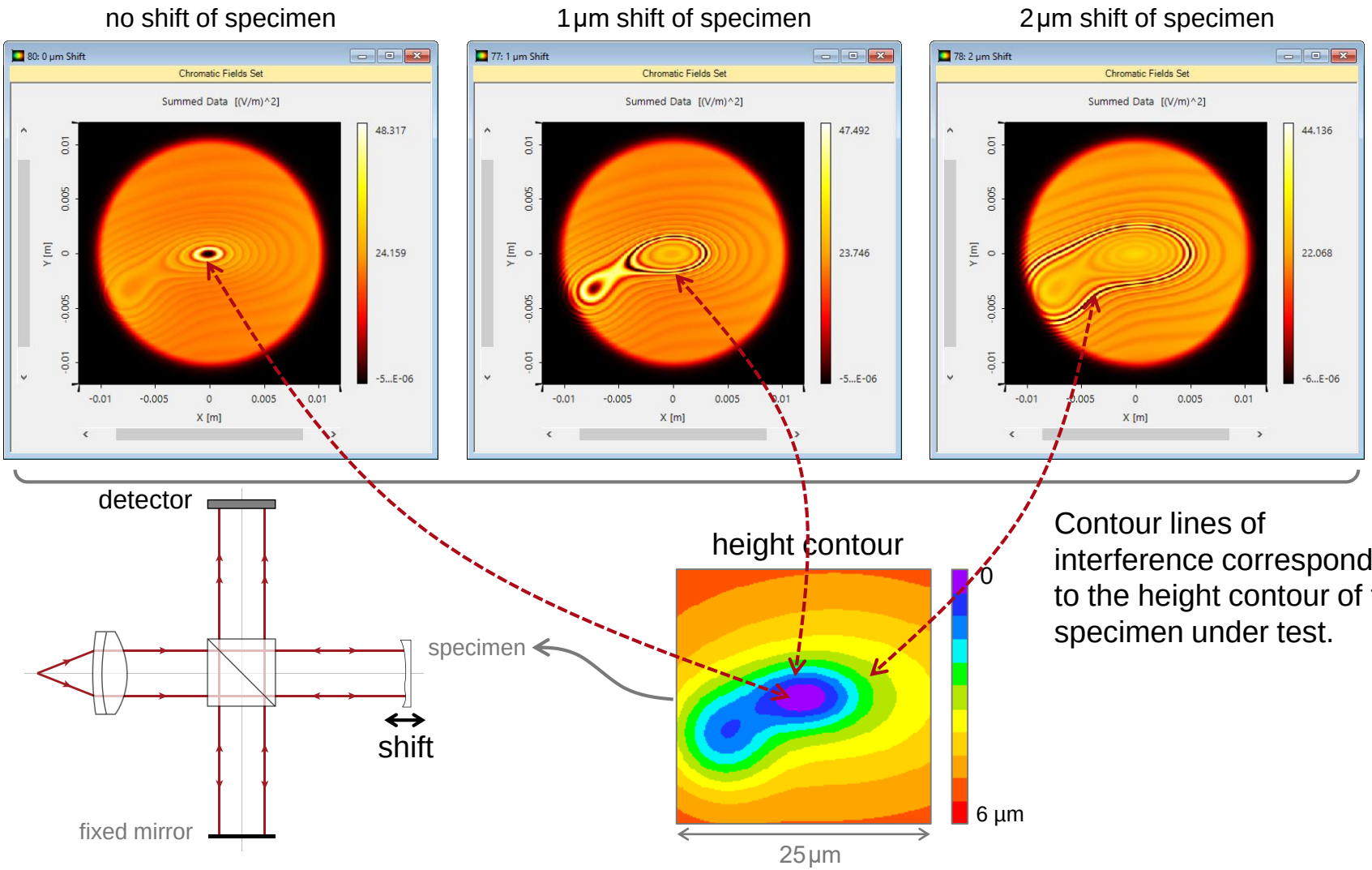


Scanning interferometry is the technique for performing surface height measurement. By exploiting the low coherence of white light source, interference pattern appears only when the path length difference is within the coherent length. Therefore, it enables precise microscopic measurement. Together with a Xenon lamp, a Michelson interferometer is built up and used to measure a specimen with smoothly varying front surface.

Modeling Task



Results


no shift of specimen
1 µm shift of specimen
2 µm shift of specimen
80: 0 µm Shift
77: 1 µm Shift
78: 2 µm Shift
Chromatic Fields Set
Summed Data [(V/m)^2]
48.317
24.159
-5...E-06
47.492
23.746
-5...E-06
44.136
22.068
-6...E-06
Y [m]
X [m]
detector
specimen
shift
fixed mirror
height contour
0
6 µm
25 µm
Contour lines of interference corresponds to the height contour of the specimen under test.

Document Information

title	Optical Topography Scanning Interferometry
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VL version used for simulations	7.4.0.45
category	Application Use Case